2/6/2004

JLab SNS Cryomodule Production Status Report
For Period Ending February 6, 2004

	Cum. To Date		**Previous 4 Wk Running Average**		**Next 4 Wk Rate (To Complete by Jan. 05)**
	Plan	Actual	Plan	Actual	
Cavities Produced	**36**	**37**	**4**	**0**	**4**
Cryomodules Produced	**8**	**8**	**1**	**1**	**1**

Major Accomplishments

- The high-pressure rinse cabinet has been returned to service. Three cavities have been processed; two are being tested, but no results are available yet.
- The M-8 cryomodule has been installed in the Cryomodule Test Facility and is being prepared for cooldown.

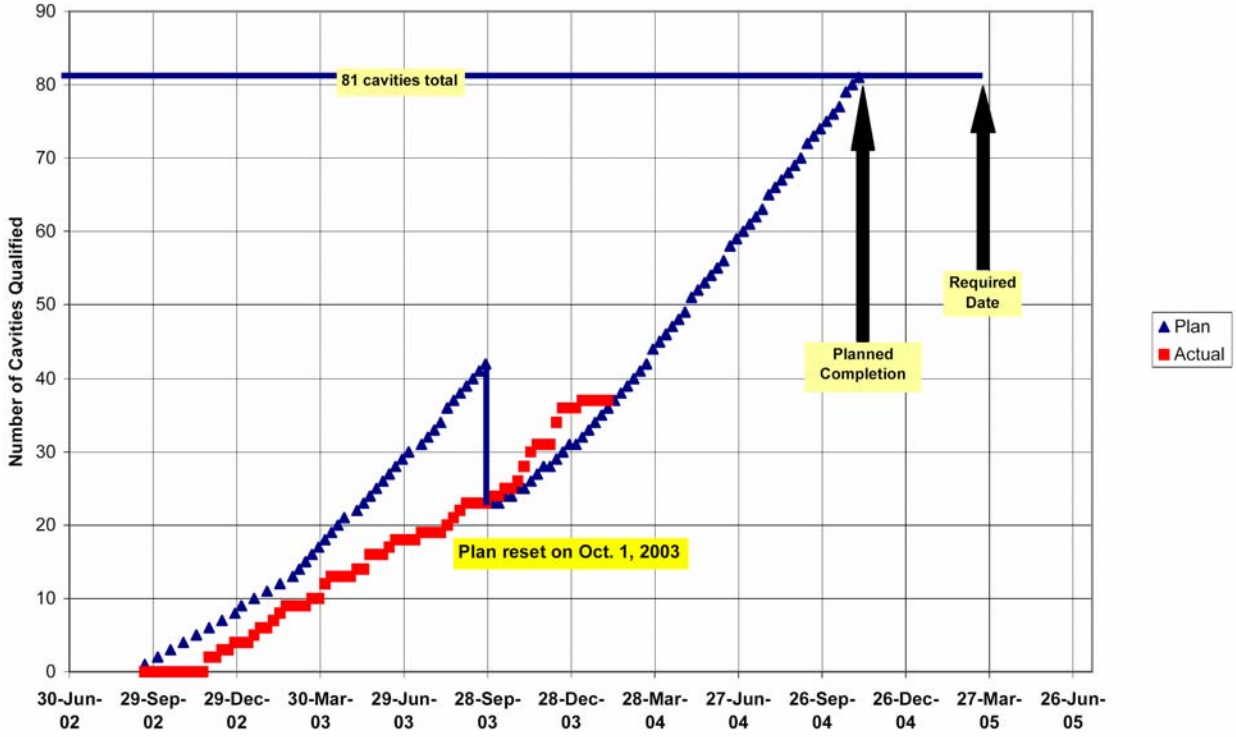
Key Issues & Actions Being Taken

- We believe that we have resolved the high-pressure rinse pump problems to the extent necessary to resume production. To assure long-term availability, the extended life test pump/motor combination has been put into service. A third pump/motor pair is being prepared for service as a qualified spare.
- To address the problems arising from poor end can quality and vendor bankruptcy, a facility to qualify and repair end cans is being established in the Test Lab. It is expected to be in service next week.

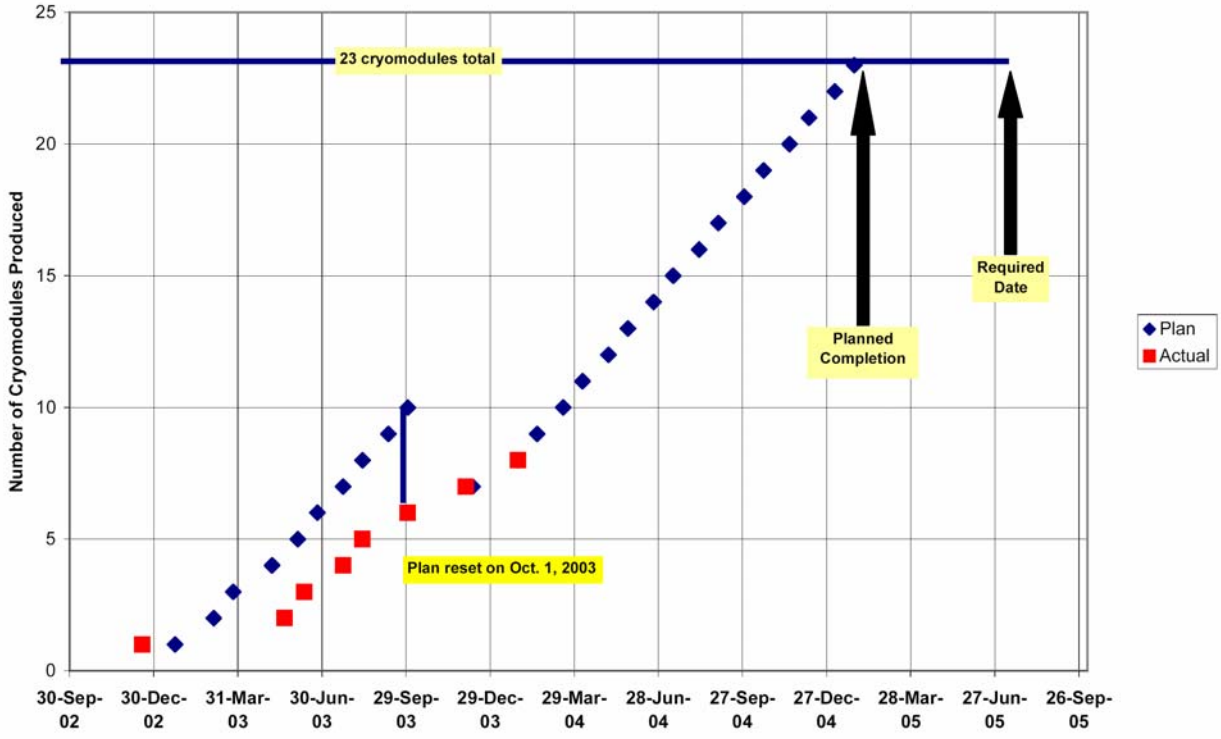
Management Items

- Management continues to closely monitor progress on resolution of the high-pressure rinse pump problems. We expect to halt the erosion of schedule next week. If the cavities presently being processed qualify, we will resume string assembly next week. Once the backlog of cavities ready for string assembly is cleared (we estimate three strings in three weeks) we will resume high-rate cavity qualification to restore the schedule cushion.
- The follow-up closeout to the October 15, 2003 review of JLab's SNS cavity processing procedures and facilities was satisfactorily completed on February 2. A summary of the Review Committee's final report is attached.
- Additional schedule slippage in cryomodule production has occurred due to delays in production of cavity strings because of the high-pressure rinse pump problems. We expect to be back on schedule by mid-April thanks to the advance work we were able to do on the M-9 module, the establishment of the end can qualification/repair facility and the improvements we are seeing in production rate through two-shift construction.

JLab SNS Cavity Qualification



JLab SNS Cryomodule Production



Summary Report Jlab SNS Follow up Video Review Feb 2, 2004

Comments and recommendations on the topics covered.

1) Cavity performance improvements and qualification success rate has improved to a reasonable level since procedure changes. We look forward with interest to results of comparison of vertical dewar and module tests of cavities with the new process improvements. Further planned procedure improvements should continue, such as better ultrasound cleaning and a fan high pressure nozzle.

2) The High Pressure Rinse system pump has been a major reliability issue. A number of improvements to the pump installation have been implemented and may result in longer MTBF. Different type pumps have been ordered and TOC monitors are being looked into. The committee believes that inexpensive TOC monitors should be installed as soon as possible while the more expensive versions and the pump installation are being planned.

3) A risk and failure recovery analysis should be carried out on all the cavity processing infrastructure to ascertain where high vulnerability areas exist and if remedial action is needed. These infrastructure areas include: UP water, HPR, oven, ultrasound systems, chemistry system, clean room, etc.

4) HOM probe changes for the high beta cavities are underway. The schedule to have these changes for the first high beta modules is tight. It appears that the newest modification to the medium beta cavities though not as good for the higher power modules could be used in the first module if necessary.

5) The SNS Cryoplant availability has impact on the cryomodule qualification at ORNL. Recently discovered problems in the 2K cold compressor system make it likely that the cryoplant will not be available for testing high gradient modules when they arrive at ORNL. The possible obvious workaround is to continue testing at Jlab. However this does not get the commissioning and experience going at ORNL. Other options under consideration are module testing at 4K and installation of available (Kinney) vacuum pumps (or a smaller dewar, pump system) to provide 2K. It is planned to review just what 4K testing would or would not accomplish but it is clear that it could not provide the standard performance measurement of Q vs E. The difficulties and benefits of the possible cryo backup systems should be looked at by cryo experts at CERN, DESY or FNAL along with SNS. Effort and expense of a 2K module test system needs evaluation. Installation of the large Kinney pumps could possibly yield a desirable back up to the cold compressors in any case. More information will be available within the next week or so.

6) The question of restarting commissioning effort on electropolishing was discussed. At this point in time with the difficulties resulting from the high pressure pump failures, the committee (with mixed emotions) felt that restarting EP work is a distraction that is unlikely to have timely results for SNS. It is more important to clearly establish the performance of the high beta cavities with BCP. In the long run Jlab will want to reenact the EP commissioning but that is after things are proceeding smoothly.

Committee

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